In the Claims

Amend claims 1-20 as follows:

1. (Currently Amended) An integrated circuit power supply for providing a direct current (DC) source voltage, comprising:

a source voltage supply unit to supply said DC source voltage;

a power supply control device coupled to the source voltage supply unit comprising a

a source voltage controller to control said high voltage side switch and said low voltage side switch when an interrupt of a supply of said DC source voltage occurs,

a discharge path circuit coupled to the source voltage controller and a switching node terminal of the power supply control device and

a timing controller coupled to the source voltage controller and the discharge path circuit,

wherein the timing controller is coupled to the discharge path circuit through an inverter driving a discharge path disable signal from the timing controller to the discharge path circuit;

an output capacitor coupled to an output node of the integrated circuit power supply and a ground terminal; and

an output voltage coil coupled to the power supply control device and to the source voltage supply unit at a first terminal and to the output capacitor and the integrated circuit power supply output node at a second terminal.

2. (Original) The integrated circuit power supply according to claim 1, wherein the source voltage supply unit further comprises:

a high voltage side switch to connect a voltage source higher than the DC source voltage to the power supply output when the DC source voltage supplied by the source voltage supply unit is lower than a predetermined voltage; and

a low voltage side switch to connect a voltage source lower than said DC source voltage to the power supply output when the DC source voltage supplied by the source voltage supply unit is higher than the predetermined voltage.

3. (Canceled) The integrated circuit power supply according to claim 1, wherein the power supply control device further comprises:

a source voltage controller to control said high voltage side switch and said low voltage side switch when an interrupt of a supply of said DC source voltage occurs;

a discharge path circuit coupled to the source voltage controller and a switching node terminal of the power supply control device; and

a timing controller coupled to the source voltage controller and the discharge path circuit;

wherein the timing controller is coupled to the discharge path circuit through an inverter driving a discharge path disable signal from the timing controller to the discharge path circuit.

4. (Currently Amended) The integrated circuit power supply according to claim ~~3~~ 1, wherein the discharge path circuit further comprises:

a rectifier coupled to the source voltage controller to prevent current from flowing from the discharge path to the power supply output;

a resistor through which a discharge current is directed from the output capacitor to a ground terminal when an interrupt to the supply of DC source voltage occurs; and

a switch coupled to the resistor that is closed when the supply of DC source voltage is interrupted.

5. (Currently Amended) The integrated circuit power supply according to claim ~~3~~ 1, wherein the discharge path circuit further comprises:

a switch coupled to the resistor that is open when the supply of DC source voltage is continuous.

6. (Currently Amended) The integrated circuit power supply according to Claim ~~3~~ 1, wherein the source voltage controller turns off the high voltage side switch and turns on the low voltage side switch when the supply of DC source voltage is interrupted.

7. (Currently Amended) The integrated circuit power supply according to Claim ~~3~~ 1, wherein the source voltage controller turns off the high voltage side switch and turns off the low voltage side switch when the supply of DC source voltage is interrupted.

8. (Currently Amended) The integrated circuit power supply according to Claim ~~3~~ 1, wherein the source voltage controller, in response to an interrupt of the supply of DC source voltage, turns on the low voltage side switch within a predefined delay period after enabling the discharge path.

9. (Currently Amended) The integrated circuit power supply according to Claim ~~3~~ 1, wherein the source voltage controller, after enabling the discharge path, turns on the low voltage side switch within a predetermined time period when the source voltage is less than a predetermined voltage and greater than a ground potential.

10. (Original) A method of suppressing voltage fluctuation in an integrated circuit power supply, the method comprising:

providing a source voltage supply unit to supply a DC source voltage to an output of the integrated circuit power supply;

coupling a power supply control device to the source voltage supply unit;

coupling an output voltage coil to the power supply control device and the source voltage supply unit;

coupling an output capacitor to the output and a ground terminal; and

when an interrupt to the supply of the DC source voltage occurs, enabling a discharge path coupled to the output.

11. (Original) The method according to claim 10, wherein the power supply control device comprises:

a source voltage controller to regulate the supply of the DC source voltage in a continuous operating mode.

12. (Original) The method according to claim 10, wherein the power supply control device further comprises:

a timing controller that directs the operational timing of the source voltage controller and the discharge path.

13. (Original) The method according to claim 12, wherein the timing controller directs a supply of a DC source voltage to resume in a normal operating mode following an interrupt of the DC supply voltage.

14. (Original) The method according to claim 12, wherein the timing controller enables the discharge path with a discharge switch following the interruption of the DC source voltage.

15. (Original) The method according to claim 10, wherein the discharge path comprises a rectifier, a resistor and a switch, wherein

the rectifier is coupled to the source voltage controller to prevent current from flowing from the discharge path to the output of the integrated circuit power supply;

the resistor is coupled to the rectifier and the switch, wherein a discharge current is sinked through the resistor from the output capacitor to the ground terminal when an interrupt to the supply of DC source voltage occurs; and

a switch coupled to the resistor and the ground terminal.

16. (Original) The method according to claim 10, wherein the discharge path

closes when the supply of the DC source voltage is interrupted.

17. (Original) The method according to claim 10, wherein the discharge path opens when the supply of DC source voltage is continuous.

18. (Original) The method according to claim 10, wherein the source voltage supply unit comprises:

a high voltage side switch to connect a voltage source higher than the DC source voltage to the power supply output when the DC source voltage supplied by the source voltage supply unit is lower than a predetermined voltage; and

a low voltage side switch to connect a voltage source lower than the DC source voltage to the power supply output when the DC source voltage supplied by the source voltage supply unit is higher than the predetermined voltage.

19. (Original) The method according to claim 16, wherein the source voltage controller turns off the high voltage side switch and turns off the low voltage side switch when the supply of DC source voltage is interrupted.

20. (Original) The method according to claim 16, wherein the source voltage controller turns off the high voltage side switch and turns on the low voltage side switch when the supply of DC source voltage is interrupted.